



# 100A NO-GAS INVERTER MIG WELDER

MODEL NO: **MINIMIG100**

Thank you for purchasing a Sealey product. Manufactured to a high standard, this product will, if used according to these instructions, and properly maintained, give you years of trouble free performance.

**IMPORTANT:** PLEASE READ THESE INSTRUCTIONS CAREFULLY. NOTE THE SAFE OPERATIONAL REQUIREMENTS, WARNINGS & CAUTIONS. USE THE PRODUCT CORRECTLY AND WITH CARE FOR THE PURPOSE FOR WHICH IT IS INTENDED. FAILURE TO DO SO MAY CAUSE DAMAGE AND/OR PERSONAL INJURY AND WILL INVALIDATE THE WARRANTY. KEEP THESE INSTRUCTIONS SAFE FOR FUTURE USE.



Refer to instructions



Wear safety footwear



Wear protective clothing



Wear a welding helmet



Wear protective gloves



Wear eye protection



Keep away from rain



Warning



Electric shock from welding electrodes can kill



Electromagnetic fields can cause pacemaker malfunction



Welding sparks can cause explosions or fire



Arc rays can burn eyes and injure skin



Breathing welding fumes can be hazardous to your health

## 1. SAFETY

### 1.1. ELECTRICAL SAFETY

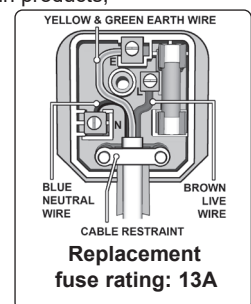
- ❑ **WARNING!** It is the user's responsibility to read, understand and comply with the following:
    - 1.1.1. You must check all electrical equipment and appliances to ensure they are safe before using. You must inspect power supply leads, plugs and all electrical connections for wear and damage. You must ensure the risk of electric shock is minimised by the installation of appropriate safety devices. An RCCB (Residual Current Circuit Breaker) should be incorporated in the main distribution board. We also recommend that an RCD (Residual Current Device) is used with all electrical products. It is particularly important to use an RCD together with portable products that are plugged into an electrical supply not protected by an RCCB. If in doubt consult a qualified electrician. You may obtain a Residual Current Device by contacting your Sealey stockist. You must also read and understand the following instructions concerning electrical safety.
      - 1.1.2. The Electricity At Work Act 1989 requires all portable electrical appliances, if used on business premises, to be tested by a qualified electrician, using a Portable Appliance Tester (PAT), at regular intervals.
      - 1.1.3. The Health & Safety at Work Act 1974 makes owners of electrical appliances responsible for the safe condition of the appliance, and the safety of the appliance operator. If in any doubt about electrical safety, contact a qualified electrician.
      - 1.1.4. Ensure the insulation on all cables and the product itself is safe before connecting to the mains power supply. See 1.1.1. & 1.1.2. above and use a Portable Appliance Tester (PAT).
      - 1.1.5. Ensure that cables are always protected against short circuit and overload.
      - 1.1.6. Regularly inspect power supply leads, plugs and all electrical connections for wear and damage. Inspect power connections to ensure that none is loose.
 

**IMPORTANT:** Ensure the voltage marked on the product is the same as the electrical power supply to be used and check that plugs are fitted with the correct capacity fuse. A 13 amp plug may require a fuse smaller than 13 amps for certain products, see fuse rating at right.

        - \* **DO NOT** pull or carry the powered appliance by its power supply lead.
        - \* **DO NOT** pull power plugs from sockets by the power cable.
        - \* **DO NOT** use worn or damaged leads, plugs or connections. Immediately replace or have repaired by a qualified electrician. A U.K. 3 pin plug must be fitted according to the following instructions. (UK only - see diagram at right).

Ensure the unit is correctly earthed via a three-pin plug.

        - a) Connect the green/yellow earth wire to the earth terminal.
        - b) Connect the brown live wire to live terminal.
        - c) Connect the blue neutral wire to the neutral terminal.
        - d) After wiring, check that there are no bare wires, that all wires have been correctly connected, that the cable external insulation extends beyond the cable restraint and that the restraint is tight.
    - 1.1.7. Cable extension reels. When a cable extension reel is used it should be fully unwound before connection. A cable reel with an RCD fitted is recommended since any product which is plugged into the cable reel will be protected. The section of the cable on the cable reel is important and should be at least 1.5mm<sup>2</sup>, but to be absolutely sure that the capacity of the cable is suitable for this product and for others that may be used in the other output sockets, we recommend the use of 2.5mm<sup>2</sup> section cable.
      - ❑ **WARNING!** Be very cautious if using a generator to power the welding set. The generator must be self-regulating and stable with regard to voltage, wave form and frequency. The output must be greater than the power consumption of the welding set. If any of the requirements are not met the electronics within the welding set may be affected.
- NOTE:** The use of an unregulated generator may be dangerous and will invalidate the warranty on the welding set.



- ❑ **WARNING!** The welding set may produce voltage surges in the mains supply which can damage other sensitive equipment (e.g. computers). **To prevent this happening, it is recommended that the welding set is connected to a power supply that does not feed any sensitive equipment.**  
**IMPORTANT: If using the welding set to it's full capacity, we recommend a 16amp supply. We recommend you discuss the installation of a 16A industrial round pin plug and socket with your electrician.**

## 1.2. GENERAL SAFETY

- ▲ **DANGER! Unplug the welding set from the mains power supply before performing maintenance or service.**
- ✓ Keep the welding set and cables in good working order and condition. Take immediate action to repair or replace damaged parts.
- ✓ Use genuine parts and accessories only. Unapproved parts may be dangerous and will invalidate the warranty.
- ✓ Use an air hose to regularly blow out any dirt from the liner and keep the welding set clean for best and safest performance.
- ✓ Check and spray the gas cup and contact tip regularly with anti-spatter spray, available from your Sealey stockist.
- ✓ Locate the welding set in a suitable work area. Ensure that the area has adequate ventilation as welding fumes are harmful.
- ✓ Keep work area clean, tidy and free from unrelated materials. Also ensure the working area has adequate lighting and that a fire extinguisher is at hand.
- ❑ **WARNING! Use welding head shield to protect eyes and avoid exposing skin to the ultraviolet rays given off by electric arc. Wear safety welding gauntlets.**
- ✓ Remove ill fitting clothing, remove ties, watches, rings and other loose jewellery and contain long hair.
- ✓ Ensure the workpiece is correctly secured before welding.
- ✓ Avoid unintentional contact with the workpiece. Accidental or uncontrolled use of the torch may be dangerous and will wear the nozzle.
- ✓ Keep unauthorised persons away from the work area. Any persons working within the area must wear a protective head shield and gloves.
- ✓ Operators must receive adequate training before using the welding set.
- ✓ Stand correctly keeping a good footing and balance, ensure the floor is not slippery and wear non-slip shoes.
- ✗ **DO NOT** operate the welding set if it or the cables are damaged and **DO NOT** attempt to fit any unapproved torches or other components to the welding set.
- ✗ **DO NOT** get the welding set wet or use in damp or wet locations or areas where there is condensation.
- ▲ **DANGER! DO NOT weld near flammable solids, liquids or gases and DO NOT weld containers or pipes which have held flammable materials. Avoid welding materials which have been cleaned with chlorinated solvents or welding near such solvents.**
- ✗ **DO NOT** stand the welding set on a metal workbench, car bodywork or similar.
- ✗ **DO NOT** touch any live metal parts of the torch or electrode while the welding set is switched on.
- ✗ **DO NOT** pull the welding set by the cable, or the torch. Protect cables from sharp or abrasive items. **DO NOT** bend, strain or stand on cables or leads.
- ✓ Protect from heat. Long lengths of slack must be gathered and neatly coiled. **DO NOT** place cables where they endanger others.
- ✗ **DO NOT** touch the torch or workpiece immediately after welding as they will be very hot. Allow to cool.
- ✗ **DO NOT** operate the welding set while under the influence of drugs, alcohol or intoxicating medication, or if tired.
- ✓ When not in use store the welding set in a safe, dry, childproof area.

## 1.3. VOLTAGE BETWEEN ELECTRODE HOLDERS OR TORCHES

Working with more than one welding machine on a single piece or on pieces that are connected electrically may generate a dangerous amount of no-load voltage between the two electrode holders or torches, the value of which may reach double the allowed limit. Measuring instruments should be used to determine the existence of a risk and suitable precautions taken.

## 1.4. ELECTROMAGNETIC INTERFERENCE

The electromagnetic fields generated by the welding process may interfere with the operation of electrical and electronic equipment. Users of vital electronic and electrical devices such as pacemakers and respirators are advised not to remain in the vicinity of an operating welding set. If in doubt seek medical advice before entering a welding area. Users of such devices should not operate the welding set. This welding set complies with the requirements of the technical standard for the use of this type of product, only and exclusively in industrial environments and for professional purposes. It is not guaranteed to meet electronic compatibility requirements in the home.

## 2. INTRODUCTION

Ultra compact and lightweight unit weighing just 6kg approx. Portability allows the welder to be taken to the job at hand. Supplied with handy carry strap. Unit can MIG weld using 1kg Ø0.8 & 0.9mm flux cored MIG wire only. Supplied with fixed non-live MIG torch and 2m cable and a 2m 10mm<sup>2</sup> earth clamp and cable. Forced air cooling system.

**IMPORTANT:** These instructions contain the information you require to prepare your welding set for welding, together with a maintenance section.

**THESE INSTRUCTIONS ARE NOT INTENDED TO TEACH YOU HOW TO WELD.**

If you have no experience, we recommend that you seek training from an expert source.

## 3. SPECIFICATION

Model No: ..... MINIMIG100  
 Welding Current: .....30-100A  
 Duty Cycle: .....100% @55A , 60%, @ 71A, 30% @ 100A  
 Wire Capacity:..... 1kg Ø0.8 & 0.9mm Flux Cored MIG Wire  
 Supply:..... 230V\*  
 Protection:..... IP21S  
 MIG Torch: .....Non-Live  
 \* NOTE: To achieve maximum power a 16A supply may be required.

## 4. RATINGS PLATE

Detailed technical data relative to the performance of the welding set is located on the back panel.

**NOTE:** The rating plate detailed in fig 1 is an example only intended to assist with the explanations of the symbols. To determine the correct technical values of the welding set refer to the data plate on your machine and the specification table above.

- 1: The relevant standard.
- 2: Inverter-transformer-rectifier symbols.
- 3: Symbol indicates welding with a continuous flow of welding wire.  
Manual arc welding with covered electrode.
- 4: Symbol for Single-phase AC supply.
- 5: Rating of internal protection provided by casing.
- 6: Output:
  - $U_0$ : Maximum open-circuit voltage.
  - $I_2, U_2$ : Current and corresponding voltage.
  - X: Welding ratio based on a 10 minute cycle.
  - 20% indicates 2 minutes welding and 8 minutes rest,
  - 100% would indicates continuous welding.
- 7: Mains Supply:
  - $U_1$ : Rated supply voltage and frequency.
  - $I_{1max}$ : Maximum current.
  - $I_{1eff}$ : Maximum effective current.
- 8: A/V - A/V: Welding current adjustment range and corresponding voltages.
- 9: Serial Number.

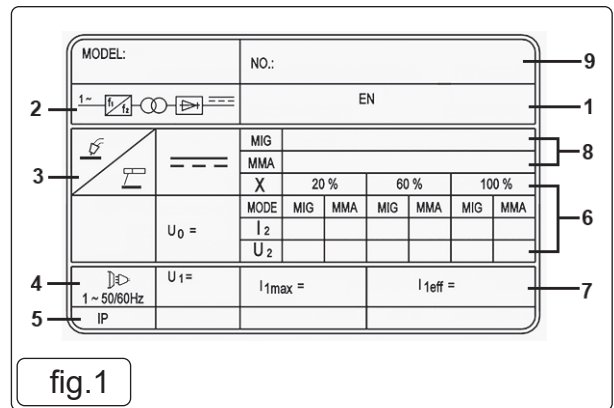


fig.1

## 5. ASSEMBLY

- **WARNING!** Disconnect from mains power supply before any assembly.
- 5.1. **FITTING A REEL OF WIRE**
  - 5.1.1. Release the catch (fig 2) and lift up the feed compartment cover (fig 3).
  - 5.1.2. Unscrew and remove the star knob, spring and retaining disc (fig 3) and place to one side.
  - 5.1.3. Slide the wire reel onto the reel holder (fig 4).
  - 5.1.4. Reattach the star knob, spring and retaining disc and fully tighten (fig 4).
    - × **DO NOT** over tighten.
  - 5.1.5. Ensure that the wire is spooling off from the bottom of the wire reel in the direction of the wire drive unit (fig 4).



fig.2

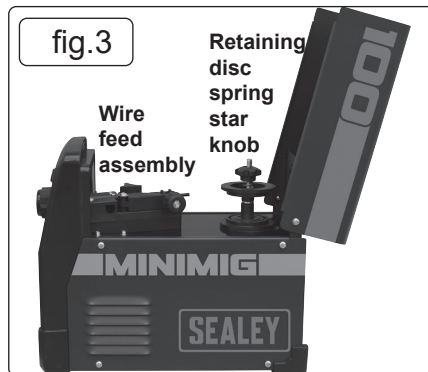


fig.3

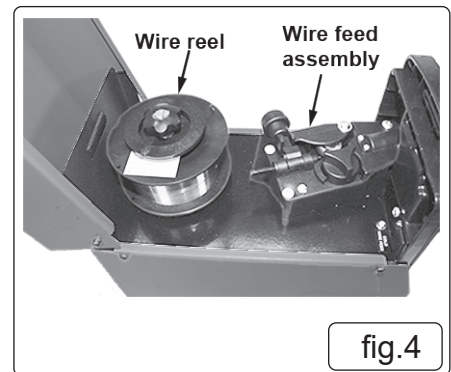


fig.4

### 5.2. FEEDING THE WIRE THROUGH THE TORCH

- **WARNING!** Ensure that the wire feed roller, the wire guide hose and the contact tip of the torch correspond to the diameter of the wire used and are fitted correctly.

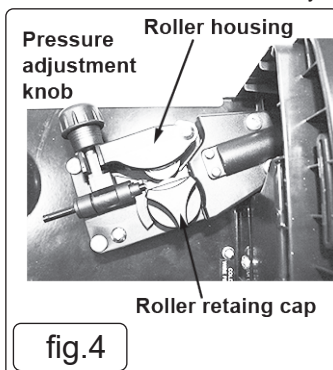


fig.4

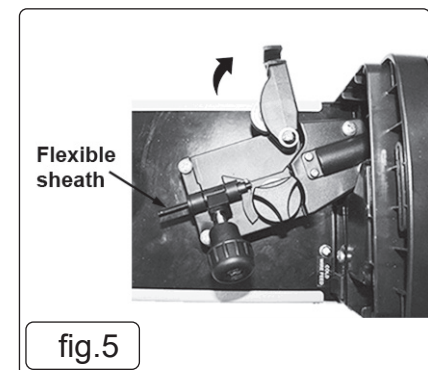


fig.5

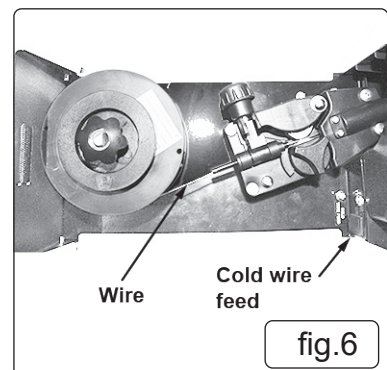
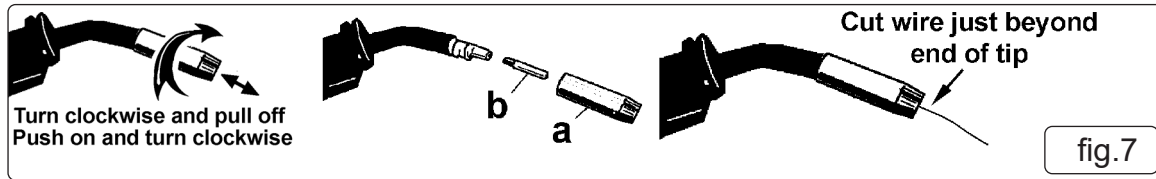


fig.6

- 5.2.1. To access the drive mechanism pull the pressure adjustment knob (fig 4) towards you and allow it to rotate downwards.
- 5.2.2. Rotate the pressure roller housing up towards the right (fig 5).
- 5.2.3. Ensure that the required feed groove (Ø0.6mm and Ø0.8mm wire) is in line with the wire path. See section 5.4 on how to reverse or change the roller.
- 5.2.4. Release the wire from the reel and trim off any bent portion and remove any burrs
  - **WARNING!** Prevent the wire from uncoiling by keeping the wire under tension at all times.
- 5.2.5. Straighten the end of wire and gently push it through the flexible sheath (fig 5), over the feed roller groove and then into the torch cable liner.

- 5.2.6. Push down the pressure roller onto the wire feed roller and hold it place then rotate the pressure knob upwards and into the housing until it snaps into position (fig 4).
- 5.2.7. Rotate the tension knob to a medium pressure.  
**NOTE:** Turning the knob clockwise increases the pressure and turning anti-clockwise decreases the pressure (fig 4).



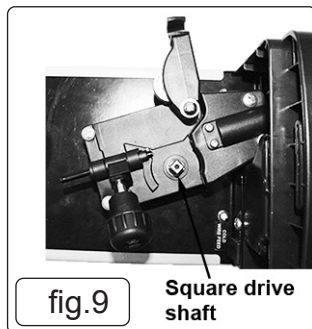
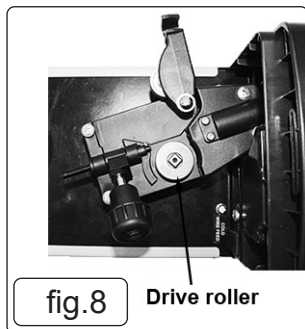
- 5.2.8. Remove the gas cup by turning clockwise and pull it off the end of the torch (fig 7a).  
 **WARNING! DO NOT** turn the gas cup anti-clockwise. This will damage the internal spring.
- 5.2.9. Unscrew the copper contact tip (fig 7b).
- 5.2.10. Check that the welding set is switched to the OFF position (fig 11) and that the earth clamp is isolated away from the torch tip.
- 5.2.11. Connect the welding set to the mains power supply, switch to the ON position and set the voltage switch to 'A' (fig 10).
- 5.2.12. Keep the torch cable as straight as possible and press the cold wire switch (fig 6) and the wire will feed through the torch.
- 5.2.13. When the wire has fully fed through, switch the welding set OFF and unplug from the mains.
- 5.2.14. Slide the contact tip over the wire and screw back into position.
- 5.2.15. Reattach the gas cup.  
 **WARNING! DO NOT** turn the gas cup anti-clockwise. This will damage the internal spring.
- 5.2.16. Cut the wire so that it is just protruding from the gas cup (fig 7).

### 5.3. SETTING THE WIRE TENSION

- 5.3.1. Adjust the wire tension by turning the wire tension knob (fig 4). Turn clockwise to increase the tension and anti-clockwise to decrease the tension.  
**IMPORTANT:** Too little or too much tension will cause problematic wire feed and poor weld quality.
- 5.3.2. Tension between rollers is checked by slowing down the wire between your gloved fingers. If the top feed rollers skid the tension is correct. Use as low a tension as possible; too high a tension will deform wire and result in a blown fuse on the printed circuit board. Adjust tension by turning the pressure knob (fig 4).

### 5.4. TURNING/CHANGING THE DRIVE ROLLER

- NOTE:** Ensure that the contact tip, the groove size on the drive wheel and torch liner correspond to the wire diameter being used. Failure to do this could cause the wire to slip and/or bind.
- 5.4.1. Open the wire feed mechanism. See section 5.2.
- 5.4.2. Rotate the roller retaining cap (fig 4) counter clockwise and remove from the retaining groove and place to one side.
- 5.4.3. Lift the drive roller off the square drive shaft (figs 8 & 9).  
**NOTE:** The size of each wire feed groove is marked on the edge of the roller on the same side as the groove.
- 5.4.4. Reverse or replace the drive roller as required. The required groove should be positioned furthest away from you and be in line with the drive path.
- 5.4.5. Replace the drive roller.
- 5.4.6. Place the roller retaining cap over the drive roller and lock into place by turning clockwise into the retaining groove.
- 5.4.7. Close the wire feed mechanism. See section 5.2.6.



### 5.5. WIRE FEED CONTROL

- 5.5.1. Select the desired wire feed with the 'Wire Feed Control' control located on the front panel of the welding set (fig 10).

## 6. CONTROLS

- 6.1. Fig 10 illustrates the main panel control for MiniMig100.



## 6.2. SYSTEM PROTECTION

A thermostat is built into the system to protect against overheating. The thermostat indicator light (fig 10) comes on when overheating occurs and cuts off the power supply. It will reset automatically within a few minutes, after cooling down.

## 7. MAINTENANCE

- ❑ **WARNING!** Disconnect from mains power supply before performing any maintenance.

### 7.1. WIRE FEED UNIT

7.1.1. Check the wire feed unit at regular intervals. The feed roller wire guide plays an important part in obtaining consistent welding results. Poor wire feed affects welding quality. Clean the rollers weekly removing all dust deposits.

### 7.2. TORCH

7.2.1. Protect the torch cable assembly from mechanical wear. Clean the liner from the machine forwards with compressed air. Replace the liner if it becomes clogged.

### 7.3. FEED ROLLER REPLACEMENT

7.3.1. See section 5.4.

### 7.4. CONTACT TIP

7.4.1. The contact tip is a consumable item and must be replaced when the hole becomes enlarged or oval. The contact tip must be kept free from spatter to ensure an unimpeded flow of gas.

### 7.5. GAS CUP

7.5.1. The gas cup must also be kept clean and free from spatter. Build up of spatter inside the gas cup can cause a short circuit at the contact tip which will result in either the fuse blowing on the printed circuit card, or expensive machine repairs.

To keep the contact tip free from spatter, we recommend the use of Sealey anti-spatter spray (MIG/722307) available from your Sealey stockist.

### 7.6. REPLACING THE LINER

7.6.1. Wind the wire back onto the spool and secure.

7.6.2. Remove the four screws securing the torch cable clamp to the wire feed unit and remove the clamp (fig 12).

7.6.3. Undo the torch case and pull the wire liner from insulation block (fig 13).

7.6.4. Pull out the liner from the torch cable.

7.6.5. Insert the replacement liner.

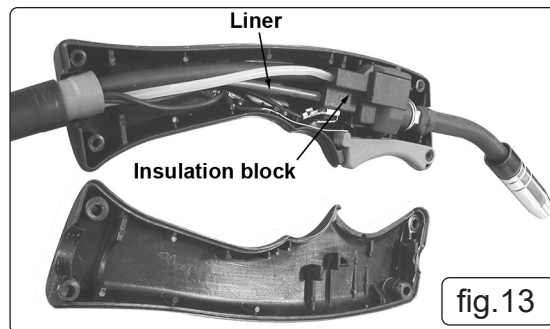
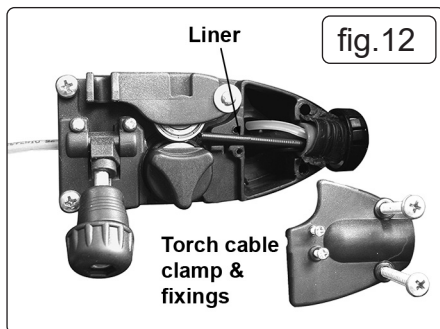
**NOTE:** Ensure that the liner is fully inserted into the torch insulation block.

7.6.6. Reassemble the torch.

7.6.7. Trim the other end of the liner as close to the feed roller as possible.

7.6.8. Reattach the torch cable clamp.

7.6.9. Feed the wire through the torch. See section 5.2.



### ENVIRONMENT PROTECTION

Recycle unwanted materials instead of disposing of them as waste. All tools, accessories and packaging should be sorted, taken to a recycling centre and disposed of in a manner which is compatible with the environment. When the product becomes completely unserviceable and requires disposal, drain any fluids (if applicable) into approved containers and dispose of the product and fluids according to local regulations.



### WEEE REGULATIONS

Dispose of this product at the end of its working life in compliance with the EU Directive on Waste Electrical and Electronic Equipment (WEEE). When the product is no longer required, it must be disposed of in an environmentally protective way. Contact your local solid waste authority for recycling information.

**Note:** It is our policy to continually improve products and as such we reserve the right to alter data, specifications and component parts without prior notice.

**Important:** No Liability is accepted for incorrect use of this product.

**Warranty:** Guarantee is 12 months from purchase date, proof of which is required for any claim.



REGISTER YOUR PURCHASE HERE

Sealey Group, Kempson Way, Suffolk Business Park, Bury St Edmunds, Suffolk. IP32 7AR



01284 757500



01284 703534



sales@sealey.co.uk



www.sealey.co.uk